

ONTARIO MINISTRY OF ENVIRONMENT



36936000022852

## OPERATING SUMMARY

TOWN OF

# AMHERSTBURG

WATER TREATMENT PLANT

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**TD**  
**367**  
**.A56**  
**A44**  
**1974**

Amherstburg : water supply  
system.  
81492



Ontario

MINISTRY OF THE ENVIRONMENT

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AMHERSTBURG

WATER SUPPLY SYSTEM

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by

Plant Performance Unit

TECHNICAL SERVICES BRANCH

T. Cross, Director



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# DESIGN DATA

Project Name: Town of Amherstburg WTP

Project Number: 5-0026-66

Nominal Capacity: 4.0 MGD

## TRAVELLING SCREEN

Type: LINK BELT Model 45A

Size: 6' x 22'

Capacity: 12 MGD

Wash: 165 GPM at 100 PSIG

## LOW LIFT PUMPS

2, Type: JOHNSTON Model 14DC

Capacity: (each) 1700 USGPM at 70' TDH

1, Type: JOHNSTON Model 20DC

Capacity: 4200 USGPM at 70' TDH

## CLARIFIER

Type: GRAVER Reactivator

Size: 65' dia. x 16' swd.

Capacity: 4.0 MGD

Loading: 0.95 IGPM/Ft.<sup>2</sup>

## WASH WATER PUMP

Type: JOHNSTON Model 16MS

Capacity: 6500 usgpm at 45' TDH

## FILTERS

4, Type: HANKIN High Rate (Dual Media)

Capacity: (each) 1.0 MGD

Loading - Avg: 2 USGPM/Ft.<sup>2</sup>

Max: 8 USGPM/Ft.<sup>2</sup>

Area: 16' x 26'

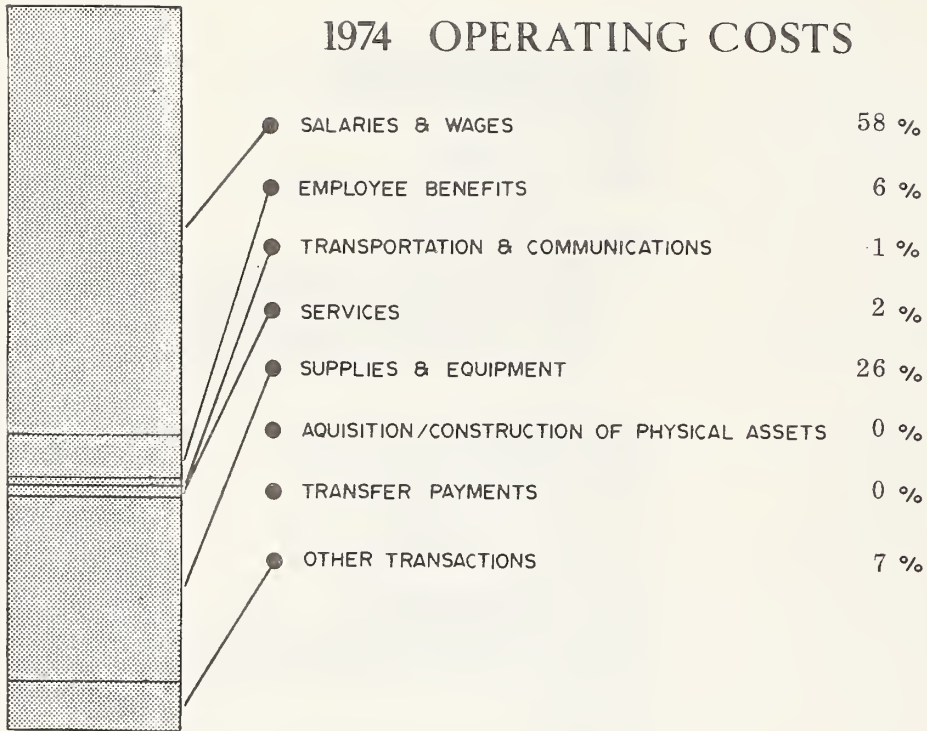
Underdrain: Miller Block

Backwash Rate: 14 USGPM/Ft.<sup>2</sup>

Jet Wash: PALMER surface wash

# ANNUAL COSTS

## 1974 OPERATING COSTS



## YEARLY OPERATING COSTS

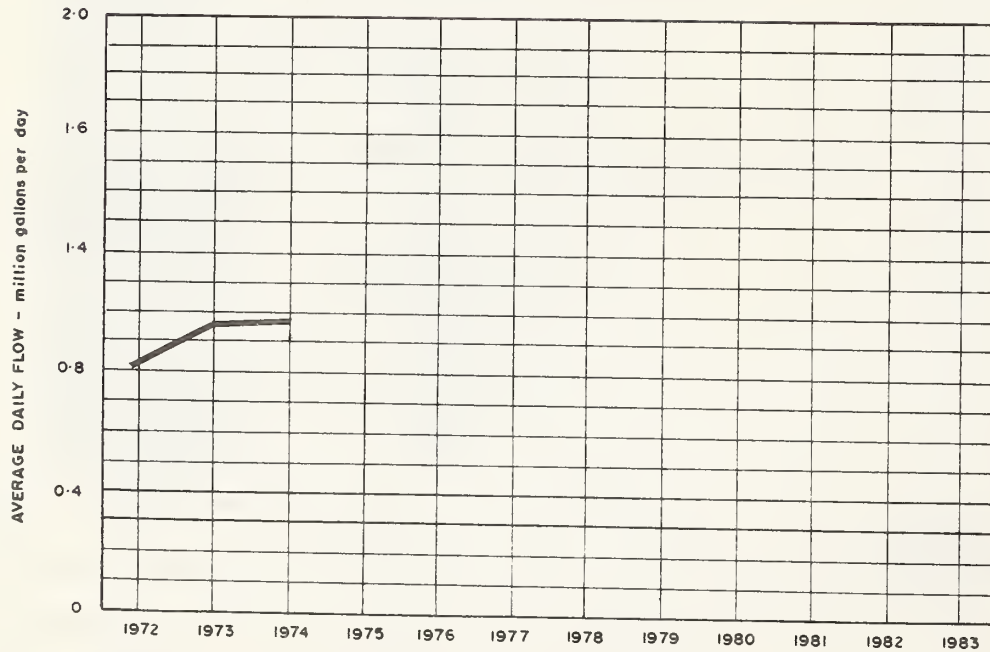
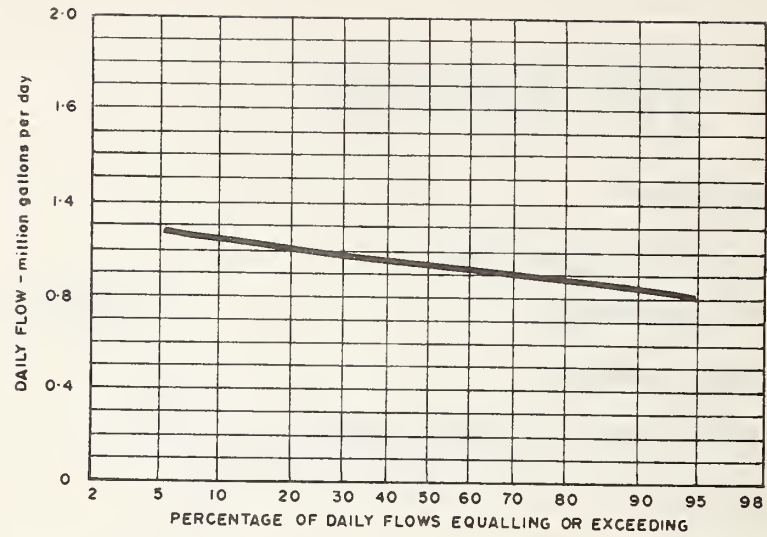
YEAR	WATER TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS
			£ /1000 gal.
1974	353	140917	40



# OPERATING EXPENDITURES

Regular Staff	\$ 77507	\$
Casual (Unclassified) Staff	3588	
TOTAL SALARIES AND WAGES		81095
TOTAL EMPLOYEE BENEFITS		8227
TOTAL TRANSPORTATION AND COMMUNICATIONS		1797
Insurance	2013	
Sludge Haulage		
Repairs and Maintenance	190	
Other Services	966	
TOTAL SERVICES		3169
Machinery and Equipment	584	
Chemicals	9854	
Utilities	19067	
Other Supplies and Equipment	7039	
TOTAL SUPPLIES AND EQUIPMENT		36544
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		10085
GRAND TOTAL	GRAND TOTAL	\$ 140917

# PROCESS DATA FLOWS

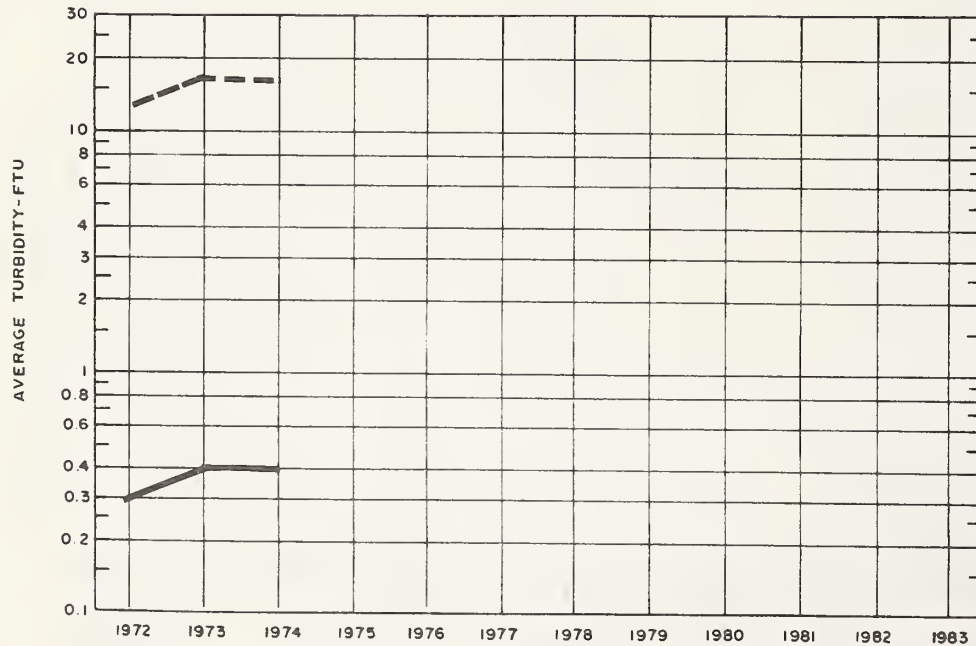
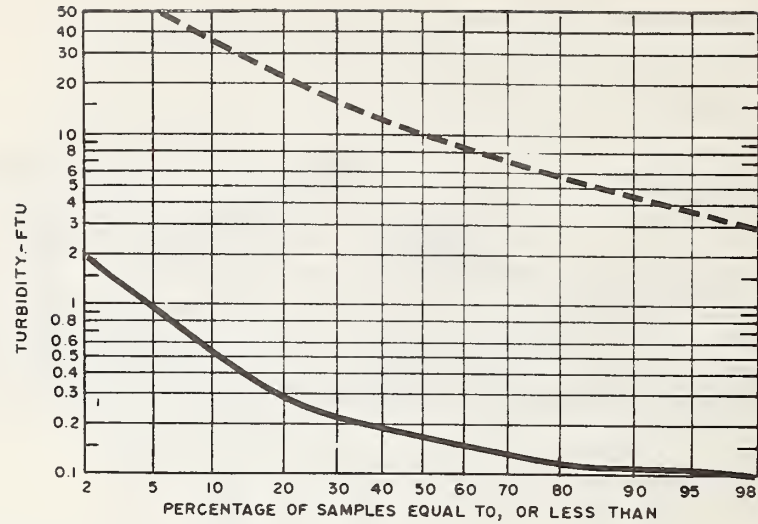


DESIGN CAPACITY 4 MGD

## PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	TURBIDITY		COLOUR		TEMPERATURE	
							AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE ° F	MAXIMUM ° F
JAN	25.88	.83	1.02	2.5	15.3		1.0	2.8	<5	<5	36	38
FEB	24.01	.86	.95	2.5	15.6		.5	1.2			36	38
MAR	26.74	.86	.94	2.5	47.6		.7	2.2			39	40
APR	27.03	.90	.98	2.5	31.4		.4	.7			45	52
MAY	28.52	.80	1.04	2.5	17.3		.3	.5			55	60
JUNE	30.74	1.02	1.14	2.5	8.5		.3	.9			60	67
JULY	35.98	1.16	1.42	2.5	11.3		.2	.4			72	74
AUG	36.07	1.16	1.53	2.5	7.7		.2	.3			74	75
SEPT	36.39	1.21	1.41	2.5	9.0		.3	.4			67	73
OCT	28.26	.91	1.09	2.5	10.1		.3	.5			57	62
NOV	26.99	.89	1.01	2.5	12.3		.3	.4			50	56
DEC	26.37	.85	.93	2.5	17.8		.1	.5			39	43
TOTAL	352.98											
AVG.		.97	MAXIMUM 1.53	MAXIMUM 2.5	17.0		.4	MAXIMUM 2.8	<5	MAXIMUM <5	53	MAXIMUM 75

# TURBIDITY



PLANT INFLUENT    - - - - -

PLANT EFFLUENT    —————

## CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	0	0	0	0	5	5	0	16	0	970	3.1	.4	.6
FEB	0	0	0	1	3	4	0	13	0	665	2.2	.4	.6
MAR	0	0	0	0	4	4	0	12	2	1010	2.8	.4	.6
APR	0	0	0	0	4	4	0	16	2	970	3.0	.4	.6
MAY	0	0	0	1	4	5	0	16	0	1065	3.2	.4	.6
JUNE	0	0	0	1	4	3	0	12	0	1130	3.1	.4	.6
JULY	0	0	0	0	2	2	0	6	0	1435	3.4	.4	.6
AUG	0	0	0	1	0	1	0	3	0	1375	3.3	.4	.6
SEPT	0	0	0	0	3	3	0	9	0	1051	2.4	.4	.6
OCT	0	0	0	0	0	0	0	0	0	795	2.2	.4	.6
NOV	0	0	0	0	1	1	0	3	0	580	1.6	.4	.6
DEC	0	0	0	0	2	2	0	6	0	655	1.9	.4	.6
TOTAL	0	0	0	4	32	34	0	112	4	11701			
AVG.	770 (NOTE - Average shown is the GEOMETRIC MEAN)									32 pounds per day	2.7	.4	.6

## TREATMENT DATA

MONTH	CHEMICALS USED										
	A L U M		SODIUM SILICATE		SODIUM BICARBONATE		FLUOSILICIC ACID		FILTER OPERATION		
	AMT. USED gallons	DOSAGE mg/l	AMT. USED gallons	DOSAGE mg/l	AMT. USED pounds	DOSAGE mg/l	AMT. USED pounds	DOSAGE mg/l	AVERAGE RUN hours	AVERAGE TURBIDITY FTU	BACKWASH WATER mil. gal.
JAN	1415	35	155	1.0	518	3.3	911				
FEB	1315	35	196	.9	420	3.3	744				
MAR	1767	43	220	.8	0		1020				
APR	1458	35	209	.8	0		870				
MAY	1357	31	63	.8	0		1007				
JUNE	1463	31	0		0		1134				
JULY	1592	29	0		0		1653				
AUG	1464	26	0		0		1938				
SEPT	1767	31	0		0		2347				
OCT	1543	35	0		0		1483				
NOV	1378	33	0		0		1447				
DEC	1442	36	167	.7	0		1323				
TOTAL	17961		1010		938		15877				
AVG	1497	33		.7		2.8	1323				



## WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $\text{CaCO}_3$	24	116	140	100	27	116	138	100	80 - 100
ALKALINITY in mg/l as $\text{CaCO}_3$	24	82	89	69	27	70	90	63	30 - 100
IRON in mg/l Fe	24	1.19	5.00	.15	26	<.05	.15	<.05	Less than 0.3
CHLORIDE in mg/l $\text{Cl}^-$	24	23	32	16	27	20	25	14	Less than 250
pH in pH units	24	7.9	8.5	7.2	27	7.4	7.7	7.0	7.0 - 8.5
FLUORIDE in mg/l $\text{F}^-$	23	0.1	.2	0.0	24	.8	1.1	.4	Less than 1.2





Date Due

Ontario. Ministry of the  
Environment. Technical Services  
Branch. Plant Performance Unit.  
TD 227/A54/A54/1974/MOE  
Amherstburg water supply system.

Annual operating summary.  
1974

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